

37589

#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Application of : ZLOTNICK

:

Serial No.: 09/616,977 : Group Art Unit: 2178

:

Filed : July 14, 2000 : Examiner: Kyle R. Stork

:

For : DIRECTORY SERVICE FOR FORM PROCESSING

Honorable Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450

#### DECLARATION UNDER 37 CFR 1.131

Sir:

- I, the undersigned, Aviad Zlotnick, hereby declare as follows:
- 1) I am the Applicant in the patent application identified above, and am the sole inventor of the subject matter described and claimed in claims 1-37 therein.
- 2) Prior to March 24, 2000, I conceived my invention, as described and claimed in the subject application, in Israel, a WTO country. Conception of the invention is evidenced by an IBM Disclosure that I wrote, entitled "Internet Directory Service For Forms Processing" (serial no. 94850-1), which is attached hereto as Appendix A.
  - 3) The dates deleted from Appendix A are prior to

## US 09/616,977

## Declaration under 37 C.F.R 1.131 by Zlotnick

March 24, 2000.

4) The following table shows the correspondence between the elements of claim 12 (as amended) in the present patent application and statements in the Disclosure attached as Appendix A:

Claim 12	Disclosure
A method for processing	Title: "Internet Directory
forms, each form including	Service For Forms
a field that is filled in	Processing." Examples of
with information in a	domains include medical
predefined domain	practice offices (page 1,
	second paragraph) and
	insurance (page 2, first
	unnumbered paragraph).
defining, in advance of	" an organization invests
reading out contents of	efforts in gathering
the forms for processing,	directory information" (page
a directory of data	1, third paragraph). "One
relating to the predefined	could start with an
domain by selecting data	established, purchased,
specific to the domain	database, and employ agents
from one or more general	to find updates" (page 1,
databases	last paragraph). "It may be
/	necessary for DS to go out
	and gather information in
	order to build all the
	directories needed by SI"
	(page 2 first unnumbered
	paragraph).

US 09/616,977

Declaration under 37 C.F.R 1.131 by zlotnick

Claim 12	Disclosure
receiving from a client	"In particular, one could
via a computer network the	offer a service that accepts
information that is filled	field images and context, and
into the field on the	returns the field content in
forms by a plurality of	coded format (ASCII), or one
users in communication	could define an interface in
with the client	coded format and return
	information in the same
	format" (page 2, first
	paragraph). "According to
	this contract, SI's system
	will send DS's web site field
	images, together with field
	classification" (page 2,
	first unnumbered paragraph).
checking whether the	" extensive use of directory
information is correct by	information can dramatically
looking up the information	reduce the number of
in the directory	keystrokes needed for data
	entry from paper" (page 1,
	first paragraph). " DS will
	respond by supplying verified
	OCR results" (page 2, first
	unnumbered paragraph). The
	verification is based on the
	directory information that
	the organization has gathered
	(page 1, first three
	paragraphs).

This table demonstrates that I conceived the entire

#### US 09/616,977

#### Declaration under 37 C.F.R 1.131 by Zlotnick

invention, as recited in claim 12, prior to March 24, 2000. Based on the similarity of subject matter between claims 12, 30 and 37, it can similarly be demonstrated that I conceived the entire invention recited in claims 30 and 37.

- 5) On March 14, 2000, I met with Dr. Daniel Kligler, of Sanford T. Colb & Co., who was retained by IBM as outside counsel for the purpose of preparing the present patent application. I was informed that Dr. Kligler had a substantial backlog of new applications that he was preparing for IBM, and that there would consequently be a delay of approximately two months in drafting this application.
- 6) On May 30, 2000, Dr. Kligler sent me a first draft of the patent application. I responded immediately with comments and corrections to the draft.
- 7) On June 1, 2000, Dr. Kligler sent me a revised draft of the patent application.
- 8) I immediately approved the revised draft for filing. It was then sent to an IBM in-house attorney for review. The attorney gave final approval to file the application on June 20, 2000. After I executed the filing documents, the application was then sent to the United States, where it was filed on July 14, 2000.

I hereby declare that all statements made herein of our my knowledge are true and that all statements made on information and conjecture are thought to be true; and

### US 09/616,977

## Declaration under 37 C.F.R 1.131 by Zlotnick

further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any patent issued thereon.

Aviad Zlotnick, Citizen of Israel

Mizpe Netofa

D.N. Galil Takhton

Nov. 30, '05

Date

# IBM CONFIDENTIAL

37589

Inventor	Aviad Zlotnick
Serial	94850-1
Dept.	HRL
Zip	Haifa 31905
Location	Israel
Phone	972-4-990-8056

# Internet Directory Service For Forms Processing

# Background

In a recent test at a customer's site we showed that extensive use of directory information can dramatically reduce the number of keystrokes needed for data entry from paper. The reason for this is that many fields on typical forms relate to addresses, telephone numbers, and various identification codes. Using sophisticated directory lookup (fuzzy search) engines, it is possible to retrieve the content of all these fields even with OCR success on a small subset of the field characters.

Some directories, such as telephone directories, are readily available, at least in a version that is only almost up to date. Other directories are much harder to get. For instance, we wanted a directory of all the medical practice offices in the USA, and it was not available. In many forms processing applications such directories may change the economics of a solution.

This disclosure discusses a business model in which an organization invests efforts in gathering directory information, and makes profits by selling services related to this information via the internet. This model fits in well with IBM's recent policy of emphasizing technology and services.

It should be noted that the some of these same services are useful even when data capture is done directly through internet forms. One still could benefit from eliminating typos, and shortening the data gathering sessions.

Patent protection is sought for the business model, content free framework, and software for this business.

# The Business Model

The business model has four components:

Information gathering: each organization can use its own ideas for information gathering.
 One could start with an established, purchased, database, and employ agents to find updates. Or one could build a database using fully internal resources. In most cases it



- would be desirable to maintain to database up to date, using whatever means possible.
- Interface: the interface defines what information the customers provide, what they get back, and how. In particular, one could offer a service that accepts field images and context, and returns the field content in coded format (ASCII), or one could define an interface in coded format and return information in the same format. I think there is use for both services.
- 3. Directory lookup: the search engines used may make a big difference in the quality of service, whether it is the OCR engine or the fuzzy search algorithm. A complete service may even include manual verification or manual key in.
- 4. Payment method: payment for the services can be done by transaction pay per field, or by project a fixed price for the duration of the project. Here too, there seems to be use for both types of payment.

As an example, let us think of a directory service provider DS, and a software integrator SI. SI wants to automate data collection for an insurance company, but does not have expertise in OCR. Instead of developing OCR technologies from scratch, or purchasing off the shelf packages and starting to learn their particulars, SI goes to DS and signs a service contract. According to this contract SI's system will send DS's web site field images, together with field classification, and DS will respond by supplying verified OCR results. It may be necessary for DS to go out and gather information in order to build all the directories needed by SI, but with some luck, after doing business with several software integrators, DS will have most of the databases ready.

As mentioned above, DS may decide to code all of SI's transactions manually. As long as the response time, throughput and price are acceptable for SI, the business will run smoothly.



## State of the Art

No such services exist in the document processing market.

In the internet domain, search sites like Yahoo and Alta Vista provide the same kind of service (information compilation and sophisticated search), but on a word basis instead of on a character basis. The internet search model is also different in that one cannot negotiate for special databases, and the payment model is different.

## Advantages

Every organization does what it knows best. System integration people do not have to get into image or text processing, and computer science experts to not have to deal with user interfaces and hardware. The interface overhead should not be forbidding in this kind of computing intensive service.

In particular, this type of service makes it possible to build document processing systems in places where the volumes are too low to justify the investment in a standard system.

